TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	CP-2017-07-26-03	**Date: 08-09-2017**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.	
Address	:	Yelahanka Satellite Town Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements and Asphalting of Roads and Drains at Santhosh Nagara in Ward No.03	
Agency	:	Technical Manager (west), KRIDL, BBMP, Bangalore.	
Customer Reference	:	BBMP/EE(YNK.D)/W.O/85/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	06-09-2017	
Sample ID No	:	2017-07-26-03/01	
Type of Mix	:	BC-Plant (Bituminous Concrete)	
Date of test	:	06-09-2017	
Oven Dry Weight	:	5000 Grams	

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	90	90	1.8	98.2	90-100
9.5	705	795	15.9	84.1	70-88
4.75	890	1685	33.7	66.3	53-71
2.36	592	2277	45.5	54.5	42-58
1.18	496	2773	55.5	44.5	34-48
0.6	508	3281	65.6	34.4	26-38
0.3	532	3813	76.3	23.7	18-28
0.15	465	4278	85.6	14.4	12-20
0.075	350	4628	92.6	7.4	4-10
PAN	372	5000	100	0.0	0

Note:
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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID	:	**CP-2017-07-26-03** **Date: 09-09-2017**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting of Roads and Drains at Santhosh Nagara in Ward No.03
Agency	:	Technical Manager (west), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/85/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-09-2017
Sample ID No	:	2017-07-26-03/01
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	06-09-2017

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	11.5	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.1		
Strength	Aggregate Impact Value	22.9	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.69	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.24	Maximum 2%	IS:2386 Part III

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-2017-07-26-03** **Date: 09-09-2017**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting of Roads and Drains at Santhosh Nagara in Ward No.03
Agency	:	Technical Manager (west), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/85/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-09-2017
Sample ID No	:	2017-07-26-03/01
Type of Mix	:	BC(Bituminous Concrete)
Date of test	:	06-09-2017

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	97.5	2.5	97.8	Minimum Retained Coating 95%
2	98.5	1.5		
3	97.5	2.5		

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-2017-07-26-03**	**Date: 09-09-2017**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.	
Address	:	Yelahanka Satellite Town Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements and Asphalting of Roads and Drains at Santhosh Nagara in Ward No.03	
Agency	:	Technical Manager (west), KRIDL, BBMP, Bangalore.	
Customer Reference	:	BBMP/EE(YNK.D)/W.O/85/2017-18	
Source of Sample	:	Hot Mix Plant, Bangalore	
Sample Condition	:	Satisfactory	
Date of Receipt	:	06-09-2017	
Sample ID No	:	2017-07-26-03/01	
Type of Mix	:	BC (Bituminous Concrete)	
Date of test	:	06-09-2017	

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

SLNo	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.25	11.3	10KN(min)
2	Marshal flow at 60°C, mm	3.58	3.55	2-4
3	Percent air Voids	4.82	4.83	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.27	14.26	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.9	71.63	65-75
6	Density, g/cc	2.24	2.26	–

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Date: 20-09-2017

Lab ID	:	CP-RW-2017-08-25-01
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting of Roads and Drains at Santhosh Nagara in Ward No.03
Agency	:	Technical Manager (west), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/85/2017-18
Source of Sample	:	Sample supplied by Agency
Date of Receipt	:	18-09-2017
Sample ID No	:	2017-08-25-01/01
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	18-09-2017

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	501
2	Weight of the sample After extraction	B	473	474
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	5.40	5.39
4	Average percentage	%	5.4	

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Lab ID : CP-RW-2017-08-25-01 **Date: 20-09-2017**

Sample ID : 2017-08-25-01/01

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 473

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	14.0	86.0	70-88
4.75	112	178	37.6	62.4	53-71
2.36	88	266	56.2	43.8	42-58
1.18	29	295	62.4	37.6	34-48
0.6	11	306	64.7	35.3	26-38
0.3	46	352	74.4	25.6	18-28
0.15	45	397	83.9	16.1	12-20
0.075	55	452	95.6	4.4	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	76	80	16.9	83.1	70-88
4.75	112	192	40.5	59.5	53-71
2.36	78	270	57.0	43.0	42-58
1.18	31	301	63.5	36.5	34-48
0.6	9	310	65.4	34.6	26-38
0.3	45	355	74.9	25.1	18-28
0.15	48	403	85.0	15.0	12-20
0.075	32	435	91.8	8.2	4-10

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Format No: CP/TF/01

TEST REPORT ON BITUMEN

Lab ID	:	**CP-2017-07-15-06** **Date: 18-07-2017**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting of Roads and Drains at Santhosh Nagara in Ward No.03
Agency	:	Technical Manager (west), KRIDL, BBMP, Bangalore.
Customer's Reference	:	BBMP/EE(YNK.D)/W.O/85/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	15-07-2017
Sample ID No	:	2017-07-16-06/01
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test	:	17-07-2017

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	64	60 to 70
2	Softening Point, °C	55	Min. 40°C
3	Ductility, cm	98	Min. 75cm
4	Flash point, °C	245	Min. 220°C
	Fire point, °C	272	

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TEST RESULTS OF GRADATION FOR GSB
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	**CP-RW-2017-07-11-02** **Date: 13-07-2017**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting of Roads and Drains at Santhosh Nagara in Ward No.03
Agency	:	Technical Manager (west), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/85/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	11-07-2017
Sample ID No	:	2017-07-11-02/01
Type of Mix	:	GSB (Granular Sub Base)
Date of test	:	11-07-2017
Oven Dry Weight	:	10120 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec. Limit Vide Table 400.1 MORTH Specification
75	0	0	0	100	100
53	990	990	9.78	90.22	80-100
26.5	1692	2682	26.50	73.50	55-90
9.5	1292	3974	39.27	60.73	35-65
4.75	1494	5468	54.03	45.97	25-55
2.36	1760	7228	71.42	28.58	20-40
0.425	1672	8900	87.94	12.06	10-25
0.075	890	9790	96.74	3.26	0-5

TESTS ON FILLER SCREEN MATERIALS

Sl no	Particulars	Test results	Spec.Limit Vide Table 400.2 MORTH Specification
1	Liquid Limit, %	22.23%	Maximum 25
2	Plasticity index, %	Non plastic	Maximum 6

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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2017-07-13-01** **Date: 15-07-2017**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Town Sub Division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting of Roads and Drains at Santhosh Nagara in Ward No.03
Agency	:	Technical Manager (west), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/85/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	13-07-2017
Sample ID No	:	2017-07-13-01/01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	13-07-2017
Oven Dry Weight	:	11200 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	335	335	3.0	97.0	95-100
22.4	2259	2594	23.2	76.8	60-80
11.2	2279	4873	43.5	56.5	40-60
4.75	2251	7124	63.6	36.4	25-40
2.36	1621	8745	78.1	21.9	15-30
0.6	623	9368	83.6	16.4	8-22
0.075	1338	10706	95.6	4.4	0-5

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